Morgan, S.; 115 Grove Street, Tarrytown, NY 10591 (US). GIESE, Mark, H.; 29 Clarendon Street, Boston, MA 02116 (US). HOOVER, Susan, B.; 5020 Thornbark Drive, Barrington, IL 60010 (US). FUCARILE, Lori, J.; 53 Melrose Street #2A, Melrose, MA 02176 (US).
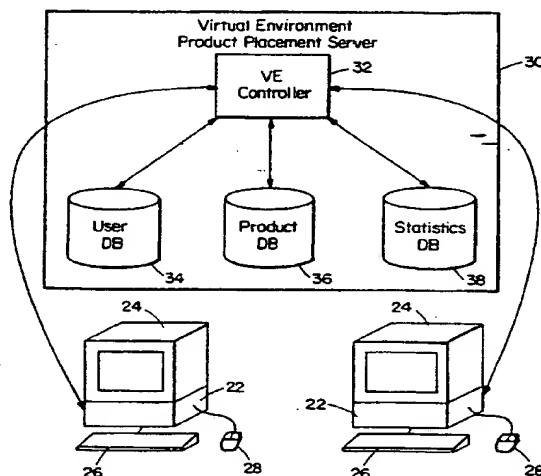
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[Continued on next page]

(54) Title: VIRTUAL ENVIRONMENT PRODUCT PLACEMENT

(57) Abstract: Product advertisements are made an integral part of a virtual environment by dynamically placing the advertisements in accordance with the context of the virtual environment. A user input can initiate an advertisement, and the specific advertisement can be personalized to the user. Advertisements may include specific product labels included on props which are manipulated by the user in the virtual environment and may include banners. The advertisements may be viewed by the user who initiates the advertisement as well as by other users in the same environment. Rewards obtained in the virtual environment may be extended to the real world as through coupons. Similarly, a real world source of a product may provide benefits in the virtual environment. Advertisers may be charged based on the actual context of the advertisement within the virtual environment including interaction with the user, user demographics and time of use.

Published:

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

-1-

VIRTUAL ENVIRONMENT PRODUCT PLACEMENT

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5 facsimile reproduction by anyone of the patent disclosure, as it appears in the Patent and Trademark Office patent files or records, but otherwise reserves all copyright rights whatsoever.

BACKGROUND OF THE INVENTION

Computer based virtual environments have long been available and continue

10 to be developed to provide greater realism and greater user interaction. Although a virtual environment for a single user may be implemented on an individual's computer, a virtual environment may be shared by many users, such as through a shared server in a multi-user domain (MUD).

Early virtual environments were text based. A textual description of the

15 environment and user options in the environment are presented on the display screen and the user controls the environment through text commands. Such virtual environments rely heavily on the imagination of the user. Today, virtual environments are more likely to be presented through 3D graphical displays which enable the user to visualize moving through the virtual environment. The user

20 interacts with the virtual environment through a joystick or mouse to control movement and use of implements within the virtual environment.

Virtual environments are widely presented as games in which a user assumes the role of a character within the virtual environment which is controlled by a virtual environment (VE) controller. The VE controller also identifies roles of non-user

adversaries and of inanimate objects such as weapons. In a network environment such as the internet, multiple users may interact within the virtual environment.

SUMMARY OF THE INVENTION

The present invention enables advertising to be placed within the context of
5 an interactive virtual environment. Advertising objects which advertise products, including services, are defined within the interactive virtual environment which is dynamically controlled in response to user input. Specific product information is dynamically placed in the advertising objects in accordance with the context of the virtual environment. For example, an advertising object may be an object of food
10 which is to be consumed by the user in the virtual environment to alleviate hunger, and a brand name may be dynamically placed on the food container.

Context may include, for example, the action of the user, personal characteristics of an individual user, the state of the virtual environment, and time of the action as well as payments made by the advertiser. Placement of specific
15 products in the advertising object may be personalized to the user dependent on skill level of the user, geographical location of the user and personal demographics of the user.

In preferred embodiments of the invention, the user of the interactive virtual environment plays a role in the virtual environment and the product serves a role as
20 an object in the virtual environment. The virtual environment may be a game environment. The virtual environment may be presented in a three-dimensional display and the product information placed as a texture map on a three-dimensional object. For example, the advertising object may be presented as a prop which is manipulated by the user.

25 Within the virtual environment, rewards to be applied to a real world product may be provided to the user. For example, product coupons may be received. The virtual environment may permit those rewards to be traded among multiple users. On the other hand, benefits within the virtual environment may be obtained from a real world source of the product. For example, a product source may distribute

coded information at its stores which can be applied to the virtual environment for special powers or implements.

In a multi-user environment, product information presented to one user may be seen by other users of the environment as well. The user's action may result in

5 continued display of an advertisement which also can be seen by other users. Within the virtual environment, specific product information may be placed as endorsements by users in the virtual environment. For example, high scorers within a game might carry a particular product banner and be rewarded with benefits within the game. Similarly, a team of users may be supported by a particular product.

10 Charges to the advertiser may be based on the context of the product information placement. For example, greater interaction of the user with the product may result in increased charges. Charges may also be based on user demographics, and there may be premium time slots during which a product placement would result in higher charges.

15 BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other objects, features and advantages of the invention will be apparent from the following more particular description of preferred embodiments of the invention, as illustrated in the accompanying drawings in which like reference characters refer to the same parts throughout the different views. The

20 drawings are not necessarily to scale, emphasis instead being placed upon illustrating the principles of the invention.

Figure 1 illustrates multiple users enjoying a virtual environment through a virtual environment product placement server embodying the invention.

Figure 2 illustrates a multiple server environment.

25 Figure 3 is a flow chart of interaction between the virtual and real environments in which product coupons are obtained in the virtual environment.

Figure 4 illustrates an interaction between the virtual and real environments in which a coupon obtained from a product supplier is used for special benefit in the virtual environment.

Figure 5 illustrates a 3D graphical presentation of a torch bearing advertising information in an illustrative implementation of the invention.

Figure 6 illustrates object files utilized in an object oriented illustrative presentation of the invention.

5   Figure 7 illustrates calls made between object files of Figure 6.

Figure 8 illustrates another set of calls in the system of Figures 6 and 7.

Figure 9 illustrates another set of calls for a food object in the system of Figures 6-8.

DETAILED DESCRIPTION OF THE INVENTION

10   The invention may be implemented in any data processing system including personal computers, game machines, set top boxes and personal digital assistants. As illustrated in Figure 1, individual users may interact with a virtual environment through personal computers 22, each having a display 24, keyboard 26 and mouse 28. Each personal computer 22 is a conventional PC having appropriate processor,

15   memory and user interfaces. Although the invention may be implemented in virtual environments limited to individual personal computers or other devices, the invention is preferably implemented over a network such as the internet under control of a virtual environment product placement server 30. The users may be in culturally and geographically separate regions, involving multiple languages and

20   time zones. As in conventional systems, the server 30 includes a virtual environment controller 32 which responds to user input within a predefined virtual environment to present the virtual environment to the individual users.

VE controller is adapted to interact with users, to control the user's actions in the VE and to display text, sound, video and graphics over the internet. The user

25   may have the role of a warrior in a virtual environment, or other roles as defined in the VE, and interactions would be between that user and the VE and, within the VE, between that user and other users.

The server 30 additionally includes user, product and statistics databases to implement the present invention. The user database stores the information requested

from individual users such as sex, age, interests and any other information which
will personalize the role, the products and the virtual environment, assist placement
of advertising and provide statistics of interest to advertisers. The product database
26 includes product specific information which assists in placement of products
5   within individual user environments and which is to be placed for individual
products. Depending upon the VE, a number of different product roles are available.
Examples of such roles include foods, beverages and healing services. Each of these
roles can have one or more real world products fulfill that role within the VE, with
the product database containing the information relating to the placements. In
10   response to a user action, the system searches the product database for a best match
for a particular context of the virtual environment. For example, the user may
activate a fast food product. The system would then select a particular fast food
product which would be of likely interest to the particular user. The choice of
product would also be dependent on the fees paid by the advertiser. For example,
15   the higher paying advertiser will obtain a greater number of impressions of its
product within the virtual environment. The advertiser may also designate the time
of day at which advertisements are to be made.

The statistics database 28 collects statistics required by advertisers and
enables appropriate charges to be made to the advertisers. For example, advertisers
20   may be charged based on the number of and quality of impressions on the users. For
example, one user may trigger the display of an advertisement which is viewed by a
number of other users within the same environment. Each user would then count as
an impression. Further, if a user actually interacts with an advertising object, such
as by eating a particular brand of food, a higher charge may be made for a higher
25   quality impression.

A computerized virtual environment, preferably 3D, engages users to role
play and utilizes product placement as strategic components of the virtual
environment which include static product placements and dynamically altered
product placements depending upon user selections of roles and choices throughout
30   play.

A number of product roles within the virtual environment can be predefined. Examples of such product roles include food to provide sustenance, beverage to quench thirst, clothing to provide coverage and protection, potions to provide magic, brokerage firm for investment of winnings, banks to store winnings, hospital for

5 healing, cleaners to fix armor, lawyer to get out of jail, car repair shop to fix vehicle, newspaper to provide hints at virtual environment and status, luggage to carry winnings and cosmetics to provide disguise.

A VE role playing virtual environment may include characters such as a warrior. The user may input information in response to certain provided questions

10 which personalizes the warrior within the VE's range of warrior definitions, (i.e., blonde hair, 6 feet, three arms). Part of the role playing virtual environment may, for example, be that the warrior is hungry. Under the invention, the warrior can interact with the VE controller until the character discovers a food establishment. At this point the VE controller would pull from an associated product database a

15 product to fulfill that role, take for example a specific fast food restaurant personalized to the particular user information. As a result, the warrior would see in the VE a specific fast food restaurant and enter the "establishment" to receive the required sustenance to continue in the VE. Points may or may not be associated with certain aspects of the virtual environment.

20   Each product role will have one or more real world products that can fulfill that product role. The ability to fill a particular product role may be priced according to but not be limited to: frequency of placement, type of use, demographics of user and timing for the placement.

There may be permanent or temporary placement of products throughout the

25 virtual environment. A "food truck" is one example of a temporary placement for a food product role. The truck may show up more frequently during the hours of 6 p.m. to 10 p.m. EST to capture a particular segment of U.S. users. In addition, it may show up in a particular portion of the VE where a certain demographic congregates. The company having a placement would pay accordingly.

Product placements may be personalized on an individual level such as on the basis of skill level, geography and personal demographics such as age and sex. Users may have a "home base" through which they always transition when starting in the VE, when healing and, when interacting with others. Thus, the "home base"
5   may have placements targeted for that particular user.

Product placements may also be personalized on a group level. Users may belong to groups (fixed and arbitrary sizes). The groups may also have a special "lair" they always transition through when interacting with others in the group. Thus the "lair" may have placements targeted for that particular group. And groups
10   may be sponsored.

Placements may be persistent across the VE, across groups or across users. In addition, placements can be temporal, limited to a period of time.

The product placement may interact with the user. Again, using a specific fast food restaurant example, when the warrior enters, a menu may be presented.
15   The screen may display a video clip and music may be played in accordance with the placement. The display may also contain a number of links. The links may provide product information, a link to the company web site or the opportunity to enter a sweepstakes and/or collect points.

The virtual environment may interact with the real environment. For
20   example, as a reward in the virtual environment, a user in the virtual environment such as at 80 in Figure 3, may be provided a coupon for the advertised product. That coupon could be printed at 82 and used in a product purchase at 84. Alternatively, coupons might be bartered within the virtual environment. For example, user 1 might provide his coupon to user 2 at 86 in a trade. User 2 would then print the
25   coupon at 88 and use the coupon in a product purchase at 90.

If the system has a "profile" of the user's name, address and personal information, the user may click on a link to receive a coupon to use in the real world for the actual company products. Such a coupon may be sent via email or postal mail to the user or go into the warrior's "knapsack" for later use. The coupon may

be adapted to contain a unique ID to track the user or the effectiveness of the virtual environment.

Companies may offer product endorsements to the high scorers in the virtual environment. Thus, the warrior may be wearing a specific running shoe

5   manufacturer's shoes of flight. When the warrior interacts with other users, the product endorsement is seen.

Groups may also be sponsored. Thus, a group may be formed that was sponsored by a car company, for example, and thus when members of the team interact with other users, the product endorsement is seen. In return, the individual

10   or group may receive certain benefits (points, VE goods, real world discounts, etc.) in exchange for the endorsement or sponsorship.

In the real world, companies having product placements may also interact. Company stores and web sites may advertise their involvement. As illustrated in Figure 4, a company may give a coupon at 92 that contains a number that, when

15   input at 94 and used in the VE 96, may provide special benefits (potion, armor, weapon, etc.) and the number may be used again to track the value of the virtual environment. In addition, the amount spent on the company may be converted to points in the virtual environment. As noted, the VE may be a mechanism for users to enter sweepstakes, receive coupons, enter contests and/or obtain virtual

20   environment points. The points collected in the VE may be converted to discount coupons to purchase products.

Companies may randomly add items to users' "knapsacks" (through coupons) to test their products. The items may also provide benefits to user in the VE, for instance improve the armor.

25   Placements may be localized according to the user's locale. Using the fast food restaurant idea, a U.S. user may be presented English menus with U.S. based products, while a Japanese user may be provided a menu in Japanese and tailored to the Japanese market. Another example is for companies that are only based in a single market, for instance car repair. In this case, the VE may have a car repair

place in the same position for all users, but a user in the U.S. would see a U.S. based company and a user in Japan would see a Japan based company.

The server may provide the requisite community building tools. Chat, email, forums, etc. may be provided and may also contain sponsorship advertising via conventional mechanisms.

The VE preferably provides age appropriate tailoring. This may be used to control aspects of the VE environment to exclude individuals that do not meet a particular profile. A child may play a virtual environment game with an adult and the VE the child sees would be "child-safe" version of the world, as defined by the parent. A role for a product that is labeled "entertainment" in the VE may display a placement from a casino that emphasizes gambling for an adult profile but arcade virtual environment games for a child profile. Or, in the same example, an adult rated movie may be the product placement for the adult profile and a child rated movie may be the product placement for a child profile.

There may be a mechanism for tracking the display and interaction of placements in order to charge the advertisers. A statistics monitoring tool may be used that charges the advertisers per access of products placed in the virtual environment and this data may be rolled up into an online metering and chargeback system. This system may be based on number of viewings, interactions, coupon downloads, click throughs, endorsements, regional reach, demographic reach, temporal-reach, community reach, etc.

Individuals may set up virtual environment servers that utilize their own private database of placements and also pull placements off of a central placement server. The central placement server derives revenue from the central placements, and the individual derives revenue from the local placements. This is like local TV stations getting portions of the advertising time slots for local sale.

A simple illustration of a text based implementation of the present invention is provided in various sections of Description. The "Text-based Interaction of a User in the Overdrive Environment" section presents the text based interaction of a user in the Overdrive environment. The "Source Files" section presents the source

code in the LPC language which underlies the presentation of the "Text-based Interaction of a User in the Overdrive Environment" section. In the illustration, the user is presented the choices of entering a "before" environment which does not incorporate the invention and an "after" environment which includes product

5   placement in accordance with the invention. Within each environment, the user removes a torch from a sconce in room 1 and eats food in room 2. In the after environment, when the user removes the torch, the torch is labeled with an information provider's name: "Federated Consolidated Brokerage Services." Thereafter, once a minute, the torch flares up and presents a banner advertisement

10   for the brokerage service. In room 2, the container of food is labeled "rawhide brand beef jerky" and the food is eaten.

In a 3D graphical implementation, the labeled torch with periodic banner might appear as illustrated in Figure 5.

The source files presented in the "Source Files" section are as follows:

15   anteroom.c - an anteroom from which the layer can enter the adventure
       placement.h - product placement definitions
       before\room1.c - the two rooms of the adventure
       before\room2.c - without product placement
       obj\food.c - generic food object
20   obj\hunger-ob.c - object representing a player's hunger
       obj\torch.c - a torch allowing product placements
       obj\place-food.c - food allowing product placements
       after\room1.c - the two rooms of the
       after\room2.c - adventure with product placement
25   after\database.c - a sample subset of the information that might be contained
                          in a product placement database
       after\placement-ob.c - a translator from LPMUD - specific calls to generic
                          database calls

The files which are processed in the after version of the adventure

30   implementing the advertisement placement are illustrated in Figure 6. The room1.c, room2.c, torch.c and place_food.c files are specific to the particular adventure. The placement_ob.c object performs any translation from the client language to the generic database language and obtains the specific advertising information from the database to be applied to the torch and food objects. The placement object would

forward to the database the class of product for which placement is desired, information about the specific user which triggered this product placement request and type of placement information requested. The type of information might be short plain text, short rich text, a static bit map of a given size and a given format, a

5 dynamic image of a given size and a given format and so on. The database makes the appropriate advertising selection and returns it to be included in the torch and food objects.

The torch placement is illustrated in Figure 7. A player within room1 48 gets a torch at 50. The torch object 52 makes a request 34 to the placement object

10 56, indicating that it requires text associated with an information provider that can be put as a label on the torch, and identifies the particular player for whom the information is required. The placement object then creates a similar request 58, including specific information about the user, to the database 60. The database then searches its files of information providers and selects one appropriate for this

15 particular user. The identity of the information provider and the specific text string to be used as a label are then returned to the placement object and to the torch object to be presented to the user as a label on the torch.

The torch object also regulates the creation of a further banner ad. Once a minute, the torch flares to include a larger text display for the same information

20 provider. To that end, as illustrated in Figure 8, the torch object counts system heartbeats (1 per 5 seconds), and every 12 heartbeats creates a request 62 to request a larger flat text placement for the previously identified information provider. That request is forwarded at 64 to the database which returns the banner text.

When the user is in room2 66, the user may input "get-food" to cause the

25 room2 object 66 to clone a place-food object 70. The place-food object makes a request 72 to the placement object for text appropriate for a label for snack food for this player. The placement object 56 then forwards a request 76 with user information to the database 60. The database 60 then returns a snack food label appropriate for this user to the placement object 56 which in turn returns it to the

30 place food object 70 for display to the user.

Although not incorporated into this source code, this example could be
extended to make a discount coupon for the product available to the user if the user
picks up that particular brand of food. Thus, the coupon is made available based on
the user's action within the virtual environment. That is, providing the reward is an
5   embedded feature of the game. In the case of the brokerage service, access to an
electronic brokerage service might be provided as a reward.

While this invention has been particularly shown and described with
references to preferred embodiments thereof, it will be understood by those skilled
in the art that various changes in form and details may be made therein without
10   departing from the scope of the invention encompassed by the appended claims.

Text-based Interaction of a User in the Overdrive Environment

```
-----------======< You have shifted into >======-----------
                      OVERDRIVE
-----------=========< WELCOME >=========-----------
```

5   LPMud   MudOS 0.9.19-1

```
****************************************************************
   * Daily automatic shutdown at 6AM EST                *
   * New characters do not save until they reach level 2.   *
   * New characters with excessively stupid or athematic names *
```
10   ```*   will be removed; please pick new names with care   *```
```
   * Be sure to read "help quickhelp" and "help general rules" *
   * Old characters are purged periodically             *
   * Please use "wizhelp <problem>" if you need wizard help   *
****************************************************************
```

15   Enter character name: jmike

Password:

This is a very small cubicle with whitewashed walls. A few beanbag chairs

lie strewn about the floor for visitors. There is a small clear plastic desk

in the center of the room, cluttered with the papers associated with half a

20   dozen half-baked projects. A single white gooseneck lamp throws weird

shadows through the room.

-- There are six obvious exits: church, hall, parapet, dragon, carnival

and patent.

JMike's to-do list (no new messages).

25   > patent

You go to the Patent Office.

/w/jmike/closed/patent/anteroom

You are in the front room of a small adventure which will illustrate an

example of the Virtual Environment Product Placement technology being

30   developed by Curl.

Through the archway labeled 'Before' is a simple area with generic items.
Through the archway labeled 'After' is the same area with some examples of
product placements.

-- There are two obvious exits: before and after.

5   > before

You walk through the archway labeled 'Before'.

/w/jmike/closed/patent/before/room1

This is a small dungeonlike but well-built room. The low ceiling is roughly
carved out of black rock. The walls were not simply carved out of the stone,

10 but rather have been made of carefully-laid brick. Dozens of sconces line
the north and south walls, and the torches they contain throw a very bright
light in the room. A passage leads off to the east, well beyond the range of
the light in this room.

-- There is one obvious exit: east.

15 > look at torches

Each of the sconces lining the north and south walls contains
a torch. A few of the torches seem loose enough to take.

> e

You walk down the long passageway.

20 A dark room.

You are feeling slightly hungry. Perhaps it'd be a good idea to find
something to eat soon.

>look

It is too dark.

25 > w

You return down the long passageway.

/w/jmike/closed/patent/before/room1

This is a small dungeonlike but well-built room. The low ceiling is roughly
carved out of black rock. The walls were not simply carved out of the stone,

but rather have been made of carefully-laid brick. Dozens of sconces line the north and south walls, and the torches they contain throw a very bright light in the room. A passage leads off to the east, well beyond the range of the light in this room.

5   -- There is one obvious exit: east.

> take torch

You extinguish one of the loose torches and take it from its mounting.

> e

You walk down the long passageway.

10   A dark room.

> light torch

You can see now!

> look

/w/jmike/closed/patent/before/room2

15   This is a small storage room with a few shelves on the east wall. There is not much else interesting about this room.

-- There is one obvious exit: west.

> look at shelves

You look on the shelves and see some packages that look like food rations.

20   > take food

You take some food from the shelves.

> look at food

This is some generic food. Eating it might reduce or eliminate hunger.

> You are feeling slightly hungry. Perhaps it'd be a good idea

25   to find something to eat soon.

eat food

You eat the food. Yum!

You burp repeatedly.

That took the edge off your hunger. Ahhh.

30   > quit

[End of first session.]

---------------======< You have shifted into >======------------
                              OVERDRIVE
---------------=========< WELCOME >==========---------------

5   LPMud   MudOS 0.9.19-1
       ****

       * Daily automatic shutdown at 6AM EST   *

       * New characters do not save until they reach level 2.   *

       * New characters with excessively stupid or athematic names *

10   *   will be removed; please pick new names with care   *

       * Be sure to read "help quickhelp" and "help general rules" *

       * Old characters are purged periodically   *

       * Please use "wizhelp <problem>" if you need wizard help *
       ****

15 Enter character name: jmike

    Password:

    This is a very small cubicle with whitewashed walls. A few beanbag chairs

    lie strewn about the floor for visitors. There is a small clear plastic desk

    in the center of the room, cluttered with the papers associated with half a

20 dozen half-baked projects. A single white gooseneck lamp throws weird

    shadows through the room.

    -- There are six obvious exits: church, hall, parapet, dragon, carnival

    and patent.

    JMike's to-do list (no new messages).

25 > patent

    You go to the Patent Office.

    /w/jmike/closed/patent/anteroom

    You are in the front room of a small adventure which will illustrate an

    example of the Virtual Environment Product Placement technology being

developed by Curl. Through the archway labeled 'Before' is a simple area with generic items. Through the archway labeled 'After' is the same area with some examples of product placements.

-- There are two obvious exits: before and after.

5　> after

You walk through the archway labeled 'After'.

/w/jmike/closed/patent/after/room1

This is a small dungeonlike but well-built room. The low ceiling is roughly carved out of black rock. The walls were not simply carved out of the stone,

10　but rather have been made of carefully-laid brick. Dozens of sconces line the north and south walls, and the torches they contain throw a very bright light in the room. A passage leads off to the east, well beyond the range of the light in this room.

-- There is one obvious exit: east.

15　> look at torches

Each of the sconces lining the north and south walls contains a torch. A few of the torches seem loose enough to take.

> take torch

You extinguish one of the loose torches and take it from its mounting.

20　> look at torch

A torch bearing the inscription:

Federated Consolidated Brokerage Services

> e

You walk down the long passageway.

25　A dark room.

> light torch

You can see now!

A torch flares up in a shower of sparks, spelling out:

-----> Federated Consolidated Brokerage Services <----

30　-------------------> The Broker For You <------------------

----------> http://www.fcbs.com/information.html <----------

> look

/w/jmike/closed/patent/after/room2

This is a small storage room with a few shelves on the east wall. There is

5   not much else interesting about this room.

-- There is one obvious exit: west.

> look at shelves

You look on the shelves and see some packages that look like food rations.

> look at food

10   Several packages on the shelves are wrapped in sturdy brown wrapping

paper, labeled in large block letters "Standard Issue Food Ration". Maybe

you could take some?

> take food

You take some food from the shelves.

15   > look at food

A container labeled: Rawhide Brand Beef Jerky

> eat food

You eat the food. Yum!

You burp repeatedly.

Source Files

anteroom.c - an anteroom from which the layer can enter the adventure

placement.h - product placement definitions

before\room1.c - the two rooms of the adventure

5   before\room2.c - without product placement

obj\food.c - generic food object

obj\hunger-ob.c - object representing a player's hunger

obj\torch.c - a torch allowing product placements

obj\place-food.c - food allowing product placements

10   after\room1.c - the two rooms of the

after\room2.c - adventure with product placement

        after\database.c - a sample subset of the information that
              might be contained in a product placement database

after\placement-ob.c - a translator from LPMUD - specific calls to generic

15   database calls

```
/*
 *  anteroom.c
 *
 *  This file contains confidential and proprietary information of
 *  Curl Corporation.  Permission is not given to disclose this
 *  information to parties outside Overdrive and Curl Corporation
 *  except as necessary for the application and processing of the
 *  patent to which it pertains.
 *
 *  Many thanks to David Schairer of Concentric Networks and Overdrive
 *  for permission to develop this sample code on Overdrive,
 *  at   overdrive.concentric.net 5195
 *
 *  J. Michael Hammond, Curl Corporation, 24 July 1999
 */

inherit "room/room";

create(){
  ::create();
  set_short("Patent Application Front Room");
  set_long("You are in the front room of a small adventure which will "
           "illustrate an example of the Virtual Environment Product "
           "Placement technology being developed by Curl.\n"
           "Through the archway labeled 'Before' is a simple area "
           "with generic items.  Through the archway labeled 'After' "
           "is the same area with some examples of product placements.\n");

  add_exit("before","/w/jmike/closed/patent/before/room1","go_before","",
           "#%a.c# walks through the archway labeled 'Before'.",
           "#%a.c# enters from the front room.",
           "You walk through the archway labeled 'Before'.");

  add_exit("after","/w/jmike/closed/patent/after/room1","","",
           "#%a.c# walks through the archway labeled 'After'.",
           "#%a.c# enters from the front room.",
           "You walk through the archway labeled 'After'.");

  set_light_level(1);
  set_rel_coordinates( ({ 0, 0, 0 }) );
}

init(){
  ::init();
}
```

-21-

```
        go_before(){
          object hunger, *inv;

          if(this_player()->is_player()){
            inv = filter_array(all_inventory(this_player()),"is_jmike_hunger_ob",
  5                     this_object());
            if(!sizeof(inv)){
              hunger = clone_object("/w/jmike/closed/patent/obj/hunger_ob");
              hunger->setup(this_player());
            }

 10       }
        }

        is_jmike_hunger_ob(ob){
          return ob->is_a_jmike_hunger_ob();
        }
```

```
/*
 * placement.h
 *
 * This file contains confidential and proprietary information of
 * Curl Corporation.  Permission is not given to disclose this
 * information to parties outside Overdrive and Curl Corporation
 * except as necessary for the application and processing of the
 * patent to which it pertains.
 *
 * Many thanks to David Schairer of Concentric Networks and Overdrive
 * for permission to develop this sample code on Overdrive,
 * at   overdrive.concentric.net 5195
 *
 * J. Michael Hammond, Curl Corporation, 24 July 1999
 * Copyright 1999 Curl Corporation
 * All rights reserved
 */

/* Product class */

#define INFORMATIONPROVIDER 1
#define TOY 2
#define SNACK_FOOD 100


/* Placement format */

#define FLAT_TEXT 1
#define BITMAP 2
#define AUDIO 3
#define XML 4
```

```
        /*
         *  before\room1.c
         *
         * This file contains confidential and proprietary information of
  5      * Curl Corporation.  Permission is not given to disclose this
         * information to parties outside Overdrive and Curl Corporation
         * except as necessary for the application and processing of the
         * patent to which it pertains.
         *
 10      * Many thanks to David Schairer of Concentric Networks and Overdrive
         * for permission to develop this sample code on Overdrive,
         * at    overdrive.concentric.net 5195
         *
         * J. Michael Hammond, Curl Corporation, 24 July 1999
 15      */

        inherit "room/room";

        int torches_taken;

        create(){
          ::create();
 20       torches_taken = 0;

          set_short("Torchlit Room");
          set_long("This is a small dungeonlike but well-built room.  The low "
                  "ceiling is roughly carved out of black rock.  The walls "
                  "were not simply carved out of the stone, but rather have been "
 25               "made of carefully-laid brick.  Dozens of sconces line the "
                  "north and south walls, and the torches they contain throw "
                  "a very bright light in the room.  A passage leads off to the "
                  "east, well beyond the range of the light in this room.\n");

          add_exit("east","/w/jmike/closed/patent/before/room2","","",
 30               "#%a.c# sets off down the long passageway to the east.",
                  "#%a.c# enters the room.",
                  "You walk down the long passageway.");

          add_item( ({"torch","torches","sconce","sconces","mounting","mountings"}),
                  "_look_torch","_get_torch");

 35       set_light_level(1);
          set_rel_coordinates( ({ 3, 2, 0 }) );
        }

        init(){
```

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```
        ::init();
    }

    reset(){
      torches_taken = 0;
5   }

    look_torch(){
      write("Each of the sconces lining the north and south walls contains\n"
          "a torch.  ");
      if(torches_taken<2){
10      write("A few of the torches seem loose enough to take.\n");
      }else{
        write("Unfortunately, all of the torches are too tightly\nmounted "
            "for you to take.\n");
      }
15    return 1;
    }

    get_torch(){
      object torch_ob;

      if(torches_taken<2){
20      write("You extinguish one of the loose torches and take it from its "
            "mounting.\n");
        say(capitalize(this_player()->query_phrase()) + " extinguishes one of "
            "the torches and pulls it from its mounting.\n");
        torch_ob = clone_object("/obj/torch");
25      torch_ob->move(this_player(),1);
        torches_taken = torches_taken+1;
      }else{
        write("You try to pry a torch loose, but fail.\n");
        say(capitalize(this_player()->query_phrase()) + " tries to pry a torch "
30        "loose from its mounting, but fails.\n");
      }
      return 1;
    }
```

```
/*
 *  before\room2.c
 *
 * This file contains confidential and proprietary information of
 * Curl Corporation.  Permission is not given to disclose this
 * information to parties outside Overdrive and Curl Corporation
 * except as necessary for the application and processing of the
 * patent to which it pertains.
 *
 * Many thanks to David Schairer of Concentric Networks and Overdrive
 * for permission to develop this sample code on Overdrive,
 * at   overdrive.concentric.net 5195
 *
 * J. Michael Hammond, Curl Corporation, 24 July 1999
 */

inherit "room/room";

create(){
  ::create();

  set_short("Storage Room");
  set_long("This is a small storage room with a few shelves on the "
        "east wall.  There is not much else interesting about this "
        "room.\n");

  add_exit("west","/w/jmike/closed/patent/before/room1","","",
        "#%a.c# sets off down the long passageway to the west.",
        "#%a.c# returns from the long passageway.",
        "You return down the long passageway.");

  add_item( ({"shelf", "shelves"}),
        "You look on the shelves and see some packages that look "
        "like food rations.\n");

  add_item( ({"food", "food ration", "food rations", "ration", "rations"}),
        "Several packages on the shelves are wrapped in sturdy brown "
        "wrapping paper, labeled in large block letters \"Standard Issue "
        "Food Ration\".  Maybe you could take some?\n",
        "_get_food");

  set_light_level(0);
  set_rel_coordinates( ({ 5, 2, 0 }) );
}

init(){
```

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```
    ::init();
  }

  get_food(){
    object food, *inv;

5   if(this_player()->is_player()){
      inv = filter_array(all_inventory(this_player()),"is_jmike_food_ob",
                  this_object());
      if(sizeof(inv) < 2){
        write("You take some food from the shelves.\n");
10      say(capitalize(this_player()->query_phrase())+" takes some food"
          " from the shelves.\n");
        food = clone_object("/w/jmike/closed/patent/obj/food");
        food->move(this_player());
      }
15  }
    return 1;
  }

  is_jmike_food_ob(ob){
    return (ob->is_a_jmike_food_ob());
20 }
```

```
/*
 * obj\food.c
 *
 * This file contains confidential and proprietary information of
 * Curl Corporation.  Permission is not given to disclose this
 * information to parties outside Overdrive and Curl Corporation
 * except as necessary for the application and processing of the
 * patent to which it pertains.
 */

inherit "/obj/treasure";

create() {
  ::create();
  set_name("food");
  set_phrase("some food");
  set_short("Some food");
  set_long("This is some generic food.  Eating it might reduce or "
           "eliminate hunger.\n");
  set_weight(1);
}

init() {
  ::init();
  add_action("eat","eat");
}

eat(str) {
  object *inv;

  if (!str || present(str,this_player()) != this_object()) return 0;
  write("You eat the food.  Yum!\n");
  say(capitalize(this_player()->query_phrase())+" eats some food.\n");
  this_player()->force_command("burp");
  inv = filter_array(all_inventory(this_player()),"is_jmike_hunger_ob",
              this_object());
  inv->take_the_edge_off();
  move("/room/void");
  destruct(this_object());
  return 1;
}

go_before(){
  object hunger, *inv;
  int i,s,found_one;
  string name, ignore;
```

```
      found_one=0;
      if(this_player()->is_player()){
       inv = filter_array(all_inventory(this_player()),"is_jmike_hunger_ob",
                 this_object());
 5     if(!sizeof(inv)){
        hunger = clone_object("/w/jmike/closed/patent/obj/hunger_ob");
        hunger->setup(this_player());
       }
      }
10    }

      is_jmike_hunger_ob(ob){
       return ob->is_a_jmike_hunger_ob();
      }

      is_a_jmike_food_ob(){
15     return 1;
      }
```

```
/*
 * obj\hunger-ob.c
 *
 * This file contains confidential and proprietary information of
 * Curl Corporation.  Permission is not given to disclose this
 * information to parties outside Overdrive and Curl Corporation
 * except as necessary for the application and processing of the
 * patent to which it pertains.
 *
 * Many thanks to David Schairer of Concentric Networks and Overdrive
 * for permission to develop this sample code on Overdrive,
 * at    overdrive.concentric.net 5195
 *
 * J. Michael Hammond, Curl Corporation, 24 July 1999
 */

inherit "/obj/treasure";

int beat_count;  /* number of heartbeats remaining before owner
                    will receive another hunger message */

int hunger_messages_sent; /* number of hunger messages already sent */

object my_target;

create(){
::create();
  set_short(0);
  add_id("jmike_hunger_ob");
  if (clonep(this_object())){
    beat_count = 3;
    hunger_messages_sent = 0;
    set_heart_beat(1);
  }
}

/* set the target of this hunger object to be the object 'ob' */

setup(ob){
  my_target=ob;
  this_object()->move(my_target);
}

/* can't drop this item */
get(){ return 1; }
```

-30-

```
      heart_beat(){
       if(beat_count){
        beat_count--;
       }else{
   5    if(hunger_messages_sent < 5){
         tell_object(my_target,"You are feeling slightly hungry.  Perhaps it'd be "
              "a good idea\nto find something to eat soon.\n");
         beat_count = 10;
         hunger_messages_sent = hunger_messages_sent + 1;
  10    }else if (hunger_messages_sent<10){
         tell_object(my_target,"You are hungry.  You really should eat "
              "something, soon.\n");
         beat_count = 5;
         hunger_messages_sent = hunger_messages_sent + 1;
  15    }else if (hunger_messages_sent<20){
         tell_object(my_target,"You are very hungry.  If you don't eat soon "
              "something bad\nis going to happen!\n");
         beat_count=3;
         hunger_messages_sent = hunger_messages_sent + 1;
  20    }else{
         tell_object(my_target,"You pass out from hunger.  Your last fading "
              "thought is that\nyou hope this isn't fatal...");
         tell_room(environment(my_target),capitalize(my_target->query_phrase())+
              " faints from hunger, fades away, and disappears!\n",
  25         ({my_target}));
        my_target->move("/w/jmike/closed/patent/anteroom",1);
        tell_object(my_target,"You wake up back in the anteroom, "
              "having failed in this\nadventure, but fortunately "
              "still alive (and no longer hungry).\n");
  30     take_the_edge_off();
        }
       }
      }


      is_a_jmike_hunger_ob(){
  35   return 1;
      }


      take_the_edge_off(){
       move("/room/void");
       write("That took the edge off your hunger.  Ahhh.\n");
  40   destruct(this_object());
      }
```

```
/*
 * obj\torch.c
 *
 * This file contains confidential and proprietary information of
 * Curl Corporation.  Permission is not given to disclose this
 * information to parties outside Overdrive and Curl Corporation
 * except as necessary for the application and processing of the
 * patent to which it pertains.
 *
 * Many thanks to David Schairer of Concentric Networks and Overdrive
 * for permission to develop this sample code on Overdrive,
 * at    overdrive.concentric.net 5195
 *
 * J. Michael Hammond, Curl Corporation, 24 July 1999
 * Copyright 1999 Curl Corporation
 * All rights reserved
 */

/* this is a Product Placement torch.  It acts like a normal torch
   except that it contains a product placement in the short
   description and, once every minute, it will flare up and generate a
   longer placement string related to the one with which it was
   created.
*/

int beat_count;
string id;

#include "/w/jmike/closed/patent/placement.h"
inherit "/obj/torch";

create(){

  string place_str;

  ::create();

  seteuid(getuid());
  "/w/jmike/closed/patent/after/placement_ob"->wakeup();
  place_str = "/w/jmike/closed/patent/after/placement_ob"->
    curl_product_placement_request(INFORMATIONPROVIDER, FLAT_TEXT,
                                64, this_player());
  set_long("A torch bearing the inscription:\n" + place_str[1] + "\n");
  id = place_str[0];
  beat_count = 12;
}
```

```
      init(){
        ::init();
      }

      light(str){
  5     set_heart_beat(1);
        return( ::light(str));

      }

      extinguish(str){
        set_heart_beat(0);
 10     return(::extinguish(str));

      }

      heart_beat(){
        string place_str;

        beat_count = beat_count - 1;
 15     if (beat_count == 0){
          place_str = "/w/jmike/closed/patent/after/placement_ob"->
            curl_specific_placement_request(FLAT_TEXT, 256, id);
          say("A torch flares up in a shower of sparks, spelling out:\n" +
                place_str[1]+"\n\n");
 20       beat_count = 12;
        }
      }
```

```
      /*
      * obj\place-food.c
      *
      * This file contains confidential and proprietary information of
 5    * Curl Corporation.  Permission is not given to disclose this
      * information to parties outside Overdrive and Curl Corporation
      * except as necessary for the application and processing of the
      * patent to which it pertains.
      */

10    #include "/w/jmike/closed/patent/placement.h"
      inherit "/w/jmike/closed/patent/obj/food";

      create() {
       string place_str;

       ::create();
15     seteuid(getuid());
       "/w/jmike/closed/patent/after/placement_ob"->wakeup();
       place_str = "/w/jmike/closed/patent/after/placement_ob"->
         curl_product_placement_request(SNACK_FOOD, FLAT_TEXT,
                                   64, this_player());
20     set_short("A container of food");
       add_id("food");
       add_id("container");
       set_long("A container labeled:\n" + place_str[1] + "\n");
       set_weight(1);
25    }

      init() {
       ::init();
       add_action("eat","eat");
      }

30    eat(str) {
       object *inv;

       if (!str || present(str,this_player()) != this_object()) return 0;
       write("You eat the food.  Yum!\n");
35     say(capitalize(this_player()->query_phrase())+" eats some food.\n");
       this_player()->force_command("burp");
       inv = filter_array(all_inventory(this_player()),"is_jmike_hunger_ob",
                   this_object());
       inv->take_the_edge_off();
40     move("/room/void");
       destruct(this_object());
```

```
      return 1;
    }

    go_before(){
      object hunger, *inv;
  5   int i,s,found_one;
      string name, ignore;

      found_one=0;
      if(this_player()->is_player()){
       inv = filter_array(all_inventory(this_player()),"is_jmike_hunger_ob",
 10               this_object());
       if(!sizeof(inv)){
         hunger = clone_object("/w/jmike/closed/patent/obj/hunger_ob");
         hunger->setup(this_player());
       }
 15   }
    }

    is_jmike_hunger_ob(ob){
      return ob->is_a_jmike_hunger_ob();
    }

 20 is_a_jmike_food_ob(){
      return 1;
    }
```

```
/*
 *    after\room1.c
 *
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 * Curl Corporation.  Permission is not given to disclose this
 * information to parties outside Overdrive and Curl Corporation
 * except as necessary for the application and processing of the
 * patent to which it pertains.
 *
 * Many thanks to David Schairer of Concentric Networks and Overdrive
 * for permission to develop this sample code on Overdrive,
 * at   overdrive.concentric.net 5195
 *
 * J. Michael Hammond, Curl Corporation, 24 July 1999
 */

inherit "room/room";

int torches_taken;

create(){
  ::create();
  torches_taken = 0;

  set_short("Torchlit Room");
  set_long("This is a small dungeonlike but well-built room.  The low "
           "ceiling is roughly carved out of black rock.  The walls "
           "were not simply carved out of the stone, but rather have been "
           "made of carefully-laid brick.  Dozens of sconces line the "
           "north and south walls, and the torches they contain throw "
           "a very bright light in the room.  A passage leads off to the "
           "east, well beyond the range of the light in this room.\n");

  add_exit("east","/w/jmike/closed/patent/after/room2","","",
           "#%a.c# sets off down the long passageway to the east.",
           "#%a.c# enters the room.",
           "You walk down the long passageway.");

  add_item( ({"torch","torches","sconce","sconces","mounting","mountings"}),
           "_look_torch","_get_torch");

  set_light_level(1);
  set_rel_coordinates( ({ 3, 2, 0 }) );
}

init(){
```

```
        ::init();
    }

    reset(){
        torches_taken = 0;
5   }

    look_torch(){
        write("Each of the sconces lining the north and south walls contains\n"
            "a torch. ");
        if(torches_taken<2){
10          write("A few of the torches seem loose enough to take.\n");
        }else{
            write("Unfortunately, all of the torches are too tightly\nmounted "
                "for you to take.\n");
        }
15      return 1;
    }

    get_torch(){
        object torch_ob;

        if(torches_taken<2){
20          write("You extinguish one of the loose torches and take it from its "
                "mounting.\n");
            say(capitalize(this_player()->query_phrase()) + " extinguishes one of "
                "the torches and pulls it from its mounting.\n");
            torch_ob = clone_object("/w/jmike/closed/patent/obj/torch");
25          torch_ob->move(this_player(),1);
            torches_taken = torches_taken+1;
        }else{
            write("You try to pry a torch loose, but fail.\n");
            say(capitalize(this_player()->query_phrase()) + " tries to pry a torch "
30              "loose from its mounting, but fails.\n");
        }
        return 1;
    }
```

-37-

```
/*
 * after\room2.c
 *
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 * information to parties outside Overdrive and Curl Corporation
 * except as necessary for the application and processing of the
 * patent to which it pertains.
 *
 * Many thanks to David Schairer of Concentric Networks and Overdrive
 * for permission to develop this sample code on Overdrive,
 * at   overdrive.concentric.net 5195
 *
 * J. Michael Hammond, Curl Corporation, 24 July 1999
 */

inherit "room/room";

create(){
 ::create();

 set_short("Storage Room");
 set_long("This is a small storage room with a few shelves on the "
         "east wall.  There is not much else interesting about this "
         "room.\n");

 add_exit("west","/w/jmike/closed/patent/after/room1","","",
         "#%a.c# sets off down the long passageway to the west.",
         "#%a.c# returns from the long passageway.",
         "You return down the long passageway.");

 add_item( ({"shelf", "shelves"}),
         "You look on the shelves and see some packages that look "
         "like food rations.\n");

 add_item( ({"food", "food ration", "food rations", "ration", "rations"}),
         "Several packages on the shelves are wrapped in sturdy brown "
         "wrapping paper, labeled in large block letters \"Standard Issue "
         "Food Ration\".  Maybe you could take some?\n",
         "_get_food");

 set_light_level(0);
 set_rel_coordinates( ({ 5, 2, 0 }) );
}

init(){
```

```
    ::init();
  }

  get_food(){
    object food, *inv;

5   if(this_player()->is_player()){
      inv = filter_array(all_inventory(this_player()),"is_jmike_food_ob",
                this_object());
      if(sizeof(inv) < 2){
        write("You take some food from the shelves.\n");
10      say(capitalize(this_player()->query_phrase())+" takes some food"
         " from the shelves.\n");
        food = clone_object("/w/jmike/closed/patent/obj/place_food");
        food->move(this_player());
      }
15  }
    return 1;
  }

  is_jmike_food_ob(ob){
    return (ob->is_a_jmike_food_ob());
20  }
```

```
/*
 * after\database.c
 *
 * This file contains confidential and proprietary information of
 * Curl Corporation.  Permission is not given to disclose this
 * information to parties outside Overdrive and Curl Corporation
 * except as necessary for the application and processing of the
 * patent to which it pertains.
 *
 * Many thanks to David Schairer of Concentric Networks and Overdrive
 * for permission to develop this sample code on Overdrive,
 * at    overdrive.concentric.net 5195
 *
 * J. Michael Hammond, Curl Corporation, 24 July 1999
 * Copyright 1999 Curl Corporation
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 */

#include "/w/jmike/closed/patent/placement.h"
int placement_iteration;

create(){
  placement_iteration=0;
}

/* This is a simplified sample of the type of information that might
   come out of a database.  In a full-scale system, this information
   might be obtained via a standardized interface from a standard
   database, via a network.  Multiple valid placements for any
   specific set of user data would be possible, selected by rotation
   or randomization.  In this example, sample data values are
   hard-coded below as an array of entries.  Each entry is also an
   array in the format:

   product class,
   placement format,
   placement length category (the smallest power of two that is larger
   than the actual length of the placement in bytes),
   target user's ideal age,
   minimum target user hours per week spent in virtual environments,
   target user's ideal sex,
   a unique identifier for this set of placements
   the set of specific placements fitting this description
*/

/* note for example that the "Frosted Sugar Bombs" placement will
```

```
          never appear on Overdrive because the age range of Overdrive users
          is reported to be 13-29
          */


          string *sample_data = ({
 5        ({INFORMATIONPROVIDER, FLAT_TEXT, 64, "18-49", 0, "", "BilTed",
          ({ "Bill and Ted's Excellent Search Engine:  www.billnted.com",
             "Visit Bill and Ted's Excellent Search Engine Today!",
             "www.billnted.com: the only search engine you'll ever need"
          })}),
10        ({INFORMATIONPROVIDER, FLAT_TEXT, 64, "25-59", 0, "", "FeCoBS",
          ({ "Federated Consolidated Brokerage Services",
             "FCBS -- no BS when it comes to financial information",
             "Federated Consolidated: low commission trades",
             "Switch brokerage accounts to FCBS!  www.fcbs.com"
15        })}),
          ({INFORMATIONPROVIDER, FLAT_TEXT, 64, "13-45", 10, "", "Zowie!",
          ({ "Zowie! The Net's Best Jump Site -- holy fresh links!",
             "Get your fresh links at Zowie!, the Net's Best Jump Site!",
             "!!!!!!!!!!!!!!!!!!!!ZOWIE!!!!!!!!!!!!!!!!!!!!"
20        })}),
          ({INFORMATIONPROVIDER, FLAT_TEXT, 64, "13-25", 20, "", "Obsess",
          ({ "ObsessionCorp, the best network gaming resource on the net",
             "Are network games your Obsession?  www.obsessioncorp.com",
             "Find opponents and new games at Obsession!"
25        })}),
          ({SNACK_FOOD, FLAT_TEXT, 64, "6-12", 0, "", "SugBom",
          ({ "Frosted Sugar Bombs Cereal .. yum!" }) }),
          ({SNACK_FOOD, FLAT_TEXT, 64, "18-35", 0, "", "RawHid",
          ({ "Rawhide Brand Beef Jerky" }) }),
30        ({SNACK_FOOD, FLAT_TEXT, 64, "59-99", 0, "", "LivrPl",
          ({ "Livvie Pyll's brand Liver Pills" }) }),
          ({SNACK_FOOD, FLAT_TEXT, 64, "1-99", 0, "", "BigBrg",
          ({ "Big Bag o'Burgers Brand Big Burger" }) }),


          ({INFORMATIONPROVIDER, FLAT_TEXT, 256, "18-49", 0, "", "BilTed",
35        ({ "\n    ***** Bill and Ted's Excellent Search Engine *****"
             "\n    *****         http://www.billnted.com        *****"
             "\n    *****     A Most Excellent Search Experience  *****",

             "\n Tired of heinous search engines?  Fed up with bogus "
40           "\n useless links?  Visit Bill and Ted's Excellent Search"
             "\n Engine and you'll be righteously rewarded!"
          })}),


          ({INFORMATIONPROVIDER, FLAT_TEXT, 256, "25-59", 0, "", "FeCoBS",
```

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```
({ "\n -----> Federated Consolidated Brokerage Services <-----"
   "\n --------------> The Broker For You <------------------"
   "\n -------> http://www.fcbs.com/information.html <--------"
})}),

({INFORMATIONPROVIDER, FLAT_TEXT, 256, "13-45", 10, "", "Zowie!",
   ({ "\nZowieZowieZowieZowieZowieZowieZowieZowieZowieZowieZowie"
      "\nZowieZowieZowieZowieZowieZowieZowieZowieZowieZowieZowie"
      "\nZowieZowieZowieZowieZowieZowieZowieZowieZowieZowieZowie"
      "\n          ZOWIE!!!!  www.zowie.com"
   }),
   ({ "\n"
      "\n"
      "\n"
      "\n             zowie.  Zowie.   Zowie!!!!"
      "\n"
      "\nhttp://www.zowie.com -- a darn good jump site"
   })}),

({INFORMATIONPROVIDER, FLAT_TEXT, 256, "13-25", 20, "", "Obsess",
   ({"\nBe honest .. how long have you been sitting there on your"
      "\nbutt playing 'net games?"
      "\n"
      "\n      That long?       Really?"
      "\nOK, you're worthy.  Check out www.obsessioncorp.com"}),
   ({"\nTired of lame games and lame opponents?  Want to find "
      "\nplayers who are as obsessed about their gaming as you are?"
      "\n          www.obsessioncorp.com"
   })})
});

placement_request( product_class, placement_format,
                   max_size, user_information ){

   /* placement_request will return an array whose format is:
      [0] = a unique ID for this placement, whose first six characters
      are the corporate ID.
      [1] = a string conforming to the placement request

      If there are no matches to the placement request, a null string
      will be returned.
   */

   mixed *valid_placements, *return_value, *the_placement;
   string age_str, temp_id, temp;
```

```
        /*
            If this is a request for a placement related to a previous one,
            filter against the previous placement's ID.  Otherwise, filter
            against the age of the user and the number of hours the user
    5       spends in virtual environments and the product class.
        */

        if(user_information["specific_product_id"]){
          valid_placements = filter_array(sample_data, "right_id",
                               this_object(),
    10                          user_information["specific_product_id"]);
        }else{

          valid_placements = filter_array(sample_data, "right_age",
                               this_object(),
                               user_information["age"]);
    15    valid_placements = filter_array(valid_placements, "right_immersion",
                               this_object(),
                               user_information["usage"]);
          valid_placements = filter_array(valid_placements, "right_product",
                                     this_object(), product_class);
    20    }

        /* filter the sample data array for the product class */
        valid_placements = filter_array(valid_placements, "right_format",
                             this_object(), placement_format);
          valid_placements = filter_array(valid_placements, "right_length",
    25                        this_object(), max_size);

        if (sizeof(valid_placements)==0) return 0;

        /* pick a random placement from among the valid ones */
        the_placement = valid_placements[random(sizeof(valid_placements))];

        /* build the unique ID */
    30  temp_id = the_placement[6] + ctime(time()) + placement_iteration;
        placement_iteration = placement_iteration+1;

        /* select one of the placement strings */

        temp = the_placement[7];
        return_value = ({ temp_id, temp[random(sizeof(temp))] }) ;

    35  return(return_value);
        }
```

```
      right_product(elt, the_class){
        return(elt[0]==the_class);
      }

      right_format(elt, the_format){
5       return(elt[1]==the_format);
      }

      right_length(elt, the_length){
        return(elt[2] <= the_length && elt[2] >= the_length/2);
      }

10    right_age(elt, age_str){
        int place_count, user_count, place_low, place_high, user_low, user_high;

        /* look for any intersection between the user's reported age range
           and the desired age range of the product placement
        */

15      place_count = sscanf(elt[3],"%d-%d", place_low, place_high);

        if (place_count==0) return 1;
        if (place_count==1) place_high = place_low;

        user_count = sscanf(age_str, "%d-%d", user_low, user_high);
        if (user_count==0) return 0;
20      if (user_count==1) user_high = user_low;

        if (user_low > place_high || user_high < place_low) return 0;

        return 1;
      }

      right_id(elt, id){
25      string first_six;

        /* compare the placement id against the first six characters of the
           previous one */

        first_six = id[0..5];
        return(elt[6]==first_six);
30    }

      right_immersion(elt, usage_str){
        int usage, count;
        count = sscanf(usage_str, "%d", usage);
```

```
return(elt[4]<=usage);
}
```

```
/*
 *    after\placement-ob.c
 *
 * This file contains confidential and proprietary information of
 * Curl Corporation.  Permission is not given to disclose this
 * information to parties outside Overdrive and Curl Corporation
 * except as necessary for the application and processing of the
 * patent to which it pertains.
 *
 * Many thanks to David Schairer of Concentric Networks and Overdrive
 * for permission to develop this sample code on Overdrive,
 * at    overdrive.concentric.net 5195
 *
 * J. Michael Hammond, Curl Corporation, 24 July 1999
 * Copyright 1999 Curl Corporation
 * All rights reserved
 */

#include "/w/jmike/closed/patent/placement.h"

create(){
  seteuid(getuid());
}

/*
  Product placement object.

  This is a simplified example of an application-specific
  VEPP module.  Simplified product-placement queries are included.
  Due to limitations of the LPMUD environment and Overdrive,
  the product-placement database will be simulated by the object
  /w/jmike/closed/patent/obj/database.c and issues of data
  transmission security and client-trust security will not be
  illustrated.
*/

/*
  One interaction between the virtual environment and the product
  placement database is where the VE has an opportunity to make a
  placement and needs to query the database to find an appropriate
  product and pertinent information about that product.

  Information that flows from the VE to the database include

  - the class of product for which a placement is desired
  - information about the specific user who triggered this
```

product-placement request
- what type of placement information is requested (for example short
   plain text, short rich text, a static bitmap of a given size in a
   given format, a dynamic image of a given size in a given format,
5   etc.)

The specific product placement information is then returned from the
database to the VE.

The following is an example of how such a query is built and the
information returned.

10   In this example, a successful placement request returns an array.

The [0] value of the array is a string containing an identifier
for the placement, to be used in subsequent transactions involving
that placement.

The [1] value of the array is a string containing the actual
15   product placement text.

The handling of target_user simulates the fact that different
applications will track user data differently and must translate
their information into a format expected by the product placement
database.

20   So in the following example, we assume that
- the gender of the player matches that of the character, except
   that "neuter" characters are played by male players,
- the age group of the user is 13-29,
- the number of hours per week spent in virtual environments is
25   a function of the character's level.
   */

curl_product_placement_request(product_class, placement_format,
                    max_size, target_user){
   object database;
30   mapping user_information;
   string temp_sex, temp_hours;
   int lev;

   if (placement_format != FLAT_TEXT) return 0;

   /* Build the user-information data structure out of the character's
35   information and Overdrive-specific assumptions */

```
        user_information = ([]);

        user_information["age"]="13-29";

        temp_sex = target_user->query_gender();
        if (temp_sex == "neuter") temp_sex = "male";
5       user_information["sex"] = temp_sex;

        lev = target_user->query_level();

        if (lev<10){
          temp_hours = "5";
10      }else if (lev<20){
          temp_hours = "8";
        }else if (lev<40){
          temp_hours = "12";
        }else if (lev<60){
15        temp_hours = "15";
        }else if (lev<100){
          temp_hours = "25";
        }else{
          temp_hours = "10";
20      }

        user_information["usage"] = temp_hours;

        /* send the query to the database and return the result to the caller */

        "/w/jmike/closed/patent/after/database"->find();
25
        return ("/w/jmike/closed/patent/after/database"->
                placement_request(product_class, placement_format,
                                   max_size, user_information ));
        }

30  curl_specific_placement_request( placement_format, max_size, id ){
        mapping user_information;
        object database;

        user_information = ([]);

        user_information["specific_product_id"] = id;

35      /* send the query to the database and return the result to the caller */

        "/w/jmike/closed/patent/after/database"->find();
```

```
    return ("/w/jmike/closed/patent/after/database"->
             placement_request(0, placement_format,
                                 max_size, user_information ));
5    }
```

CLAIMS

What is claimed is:

1.   In a data processing system, a method of processing an interactive virtual
environment comprising:

providing advertising objects which advertise products within the
interactive virtual environment;

dynamically controlling the virtual environment, including the
advertising objects, in response to user input; and

dynamically placing specific product information in the advertising
objects in accordance with the context of the virtual environment.

2.   A method as claimed in claim 1 wherein a user of the interactive virtual
environment plays a role in the virtual environment and the product serves a
role as an object in the virtual environment which responds to input from the
user.

3.   A method as claimed in claim 2 wherein an input from the user initiates
placement of product information.

4.   A method as claimed in claim 3 wherein, once product placement is initiated,
additional placements for the product are initiated independent of user input.

5.   A method as claimed in claim 4 wherein multiple users share the virtual
environment including the product information which is placed independent
of user input.

6.   A method as claimed in claim 1 wherein the interactive virtual environment
is a game environment.

7. A method as claimed in claim 1 wherein placement of specific products in the advertising object is personalized to the user.

8. A method as claimed in claim 7 wherein the placement of specific products is dependent on skill level of the user.

5 9. A method as claimed in claim 7 wherein the placement of specific products is dependent on the geographical location of the user.

10. A method as claimed in claim 7 wherein the placement of specific products is dependent on personal demographics of the user.

11. A method as claimed in claim 1 wherein the virtual environment is presented
10 in a three dimensional display and the product information is placed as a texture map on a three dimensional object.

12. A method as claimed in claim 11 wherein the advertising object is presented as a prop manipulated by the user.

13. A method as claimed in claim 1 further comprising providing rewards to the
15 user to be applied to a real world product.

14. A method as claimed in claim 13 further comprising trading rewards among multiple users in the virtual environment.

15. A method as claimed in claim 1 further comprising providing benefits in the virtual environment obtained from a real world source of the product.

20 16. A method as claimed in claim 1 wherein multiple users share the virtual environment including the specific product information in the advertising objects.

17. A method as claimed in claim 1 further comprising placing the specific product information such that the placements serve as endorsements by users in the virtual environment.

18. A method as claimed in claim 17 wherein multiple users share the virtual environment and serve as a team which share endorsements.

5

19. A method as claimed in claim 1 further comprising charging for advertising based on the context of product information placement.

20. A method as claimed in claim 19 wherein the charge is dependent on the user's interaction with the product in the virtual environment.

10   21. A method as claimed in claim 19 wherein the charge is dependent on user demographics.

22. A method as claimed in claim 19 wherein the charge is dependent on the time of placement.

23. A method as claimed in claim 1 wherein the virtual environment is

15   controlled by a remote virtual environment server and the user interacts with the virtual environment at a client to the server.

24. In a data processing system, a method of processing an interactive virtual environment comprising:

       providing a virtual environment in a three dimensional display;

20   dynamically controlling the virtual environment in response to user input, the user of the interactive environment playing a role in the virtual environment; and

in response to user input, creating a prop in the virtual environment to be manipulated by the user, specific product information being included on the prop in accordance with the context of the virtual environment.

25. A method as claimed in claim 24 wherein placement of specific products in the advertising object is personalized to the user.

26. A method as claimed in claim 24 further comprising providing rewards to the user to be applied to the real world product.

27. A method as claimed in claim 24 further comprising providing benefits in the virtual environment obtained from a real world source of the product.

28. A data processing system providing an interactive virtual environment comprising:

advertising objects which advertise products within the interactive virtual environments; and

means for placing specific product information in the advertising objects in accordance with the context of the virtual environment.

29. A system as claimed in claim 28 wherein a user of the interactive virtual environment plays a role in the virtual environment and the product serves a role as an object in the virtual environment which responds to input from the user.

30. A system as claimed in claim 29 wherein an input from the user initiates placement of product information.

31. A system as claimed in claim 30 wherein, once product placement is initiated, additional placements for the product are initiated independent of user input.

32. A system as claimed in claim 31 wherein multiple users share the virtual environment including the product information which is placed independent of user input.

33. A system as claimed in claim 28 wherein the interactive virtual environment is a game environment.

5

34. A system as claimed in claim 28 wherein placement of specific products in the advertising object is personalized to the user.

35. A system as claimed in claim 34 wherein the placement of specific products is dependent on skill level of the user.

10 36. A system as claimed in claim 34 wherein the placement of specific products is dependent on the geographical location of the user.

37. A system as claimed in claim 34 wherein the placement of specific products is dependent on personal demographics of the user.

38. A system as claimed in claim 28 wherein the virtual environment is presented in a three dimensional display and the product information is placed as a texture map on a three dimensional object.

15

39. A system as claimed in claim 28 wherein the advertising object is presented as a prop manipulated by the user.

40. A system as claimed in claim 28 further comprising means for providing rewards to the user to be applied to a real world product.

20

41. A system as claimed in claim 40 further comprising means for trading rewards among multiple users in the virtual environment.

42.   A system as claimed in claim 28 further comprising means for providing benefits in the virtual environment obtained from a real world source of the product.

43.   A system as claimed in claim 28 wherein multiple users share the virtual environment including the specific product information in the advertising objects.

44.   A system as claimed in claim 28 further comprising means for placing the specific product information such that the placements serve as endorsements by users in the virtual environment.

45.   A system as claimed in claim 44 wherein multiple users share the virtual environment and serve as a team which share endorsements.

46.   A system as claimed in claim 28 further comprising charging for advertising based on the context of product information placement.

47.   A system as claimed in claim 46 wherein the charge is dependent on the user's interaction with the product in the virtual environment.

48.   A system as claimed in claim 46 wherein the charge is dependent on user demographics.

49.   A system as claimed in claim 46 wherein the charge is dependent on the time of placement.

50.   A method as claimed in claim 28 wherein the virtual environment is controlled by a remote virtual environment server and the user interacts with the virtual environment at a client to the server.

-55-

51.   A method of providing targeted advertising in a 3D gaming environment, the
method comprising:

        determining user demographics information corresponding to a user
of the 3D gaming environment;

5   using the user demographics information to dynamically select a
product to be advertised and used in the 3D environment;

        generating a virtual representation of the product; and

        allowing the user to interact with the product in the 3D gaming
environment.

10   52.   A computer program product comprising:

        a computer usable medium;

        a set of computer program instructions embodied on the computer
usable medium, including instructions to:

                provide advertising objects which advertise products within
15   the interactive virtual environments;

                dynamically control the virtual environment, including the
advertising objects, in response to user input; and

                dynamically place specific product information in the
advertising objects in accordance with the context of the virtual
20   environment.

53.   An electromagnetic waveform comprising computer program code, the
computer program code dynamically placing specific product information in
advertising objects in a virtual environment in accordance with the context of
the virtual environment.

25

FIG. 1

FIG. 2

80 — USER 1 VE → USER 2 VE — 86

82 — PRINT COUPON   PRINT COUPON — 88

84 — PRODUCT PURCHASE   PRODUCT PURCHASE — 90

FIG. 3

92 — COUPON OBTAINED WITH PRODUCT

94 — INPUT COUPON CODE

96 — VE

FIG. 4

FIG. 5

Files involved:

Room1.c   Room2.c

Torch.c   Place_food.c

- -

Placement_ob.c

- -

Database.c

FIG. 6

Player
Object

52

Torch.c

Room1.c   50   54   CurLProduct_Place-
                                ment_Request( )

48

Placement_ob.c

Placement_   56
Request( )   58

Database.c

FIG. 7   60
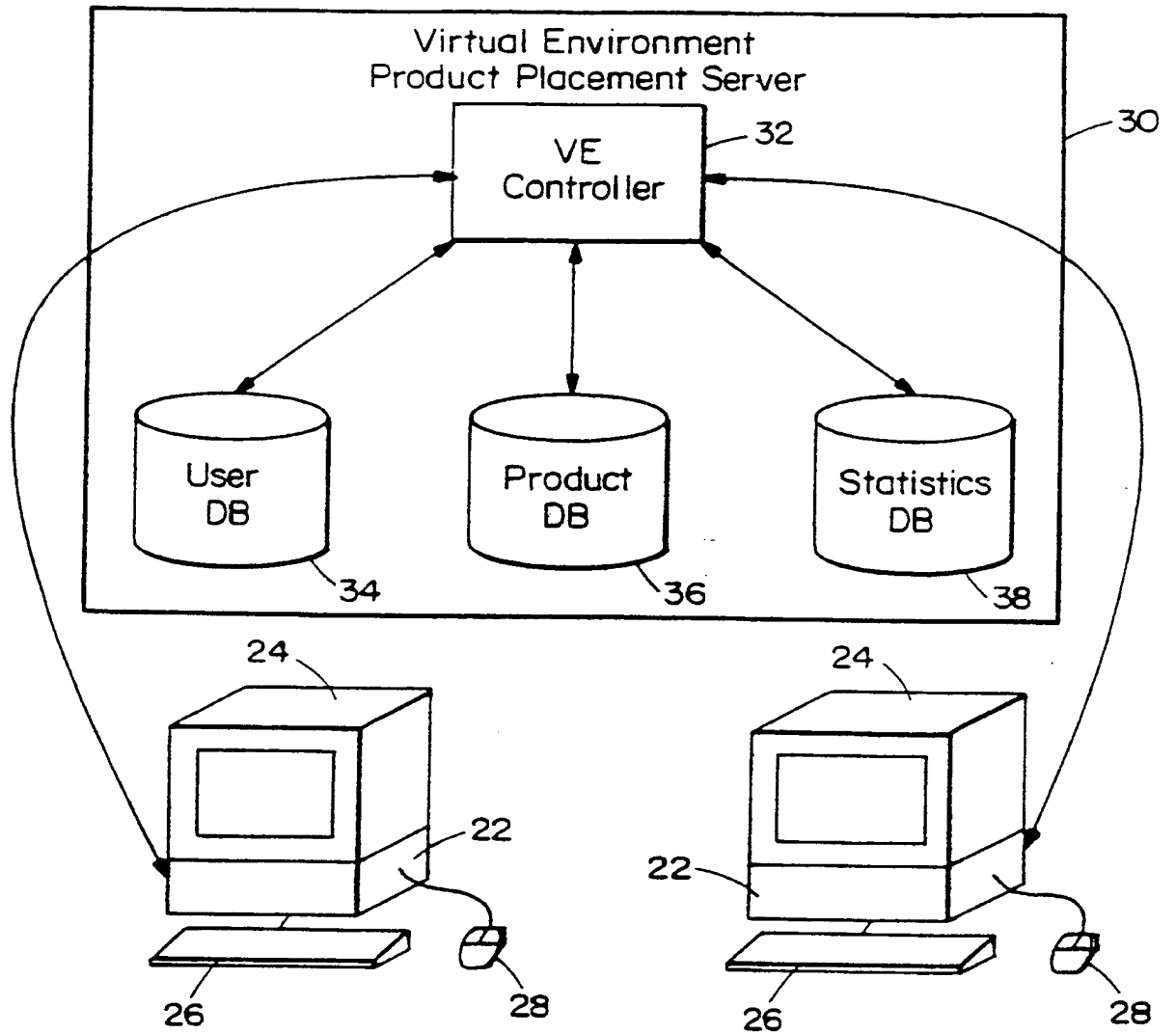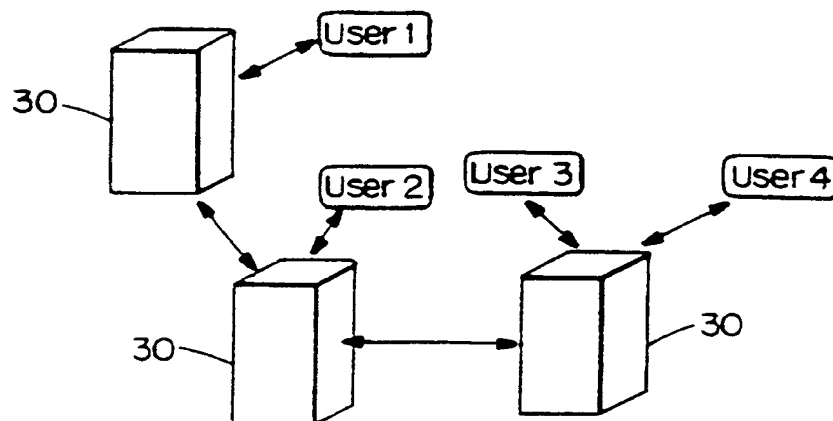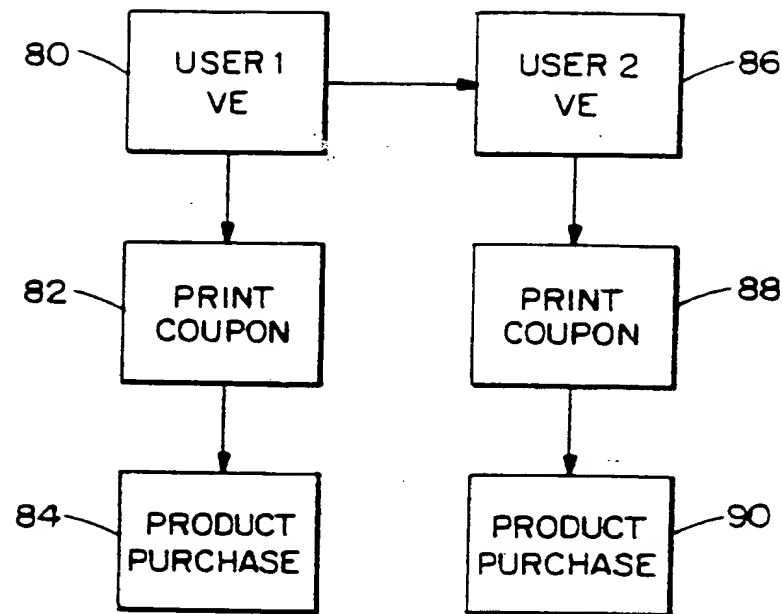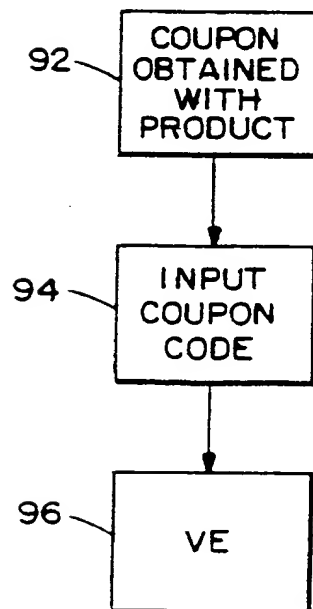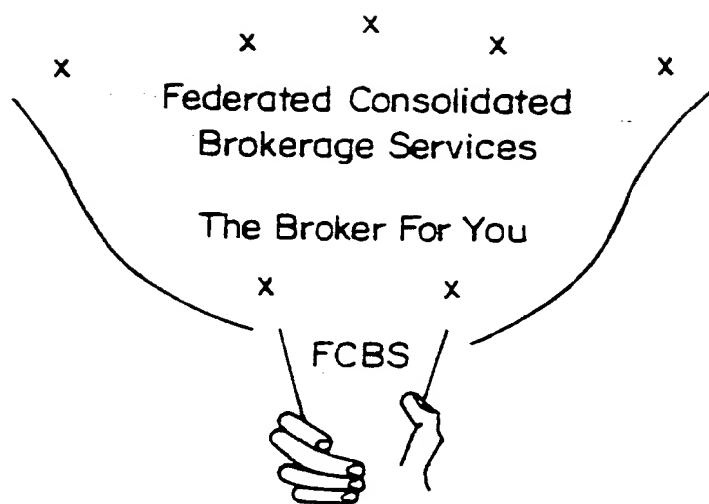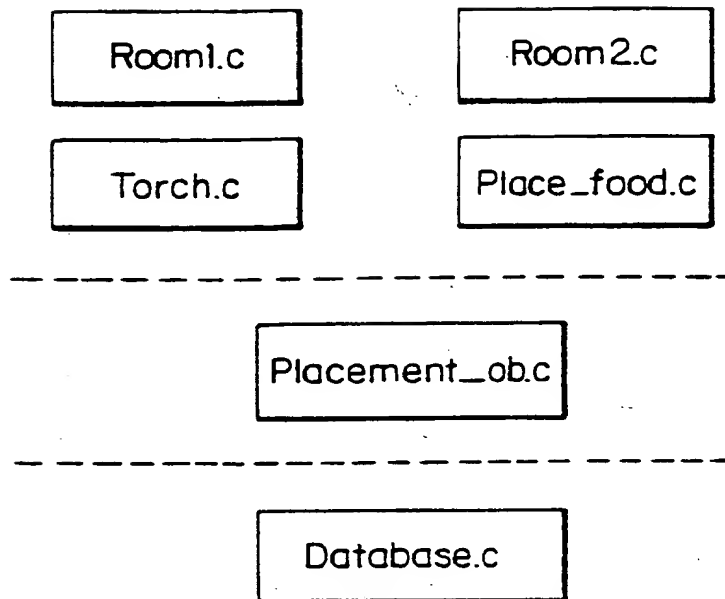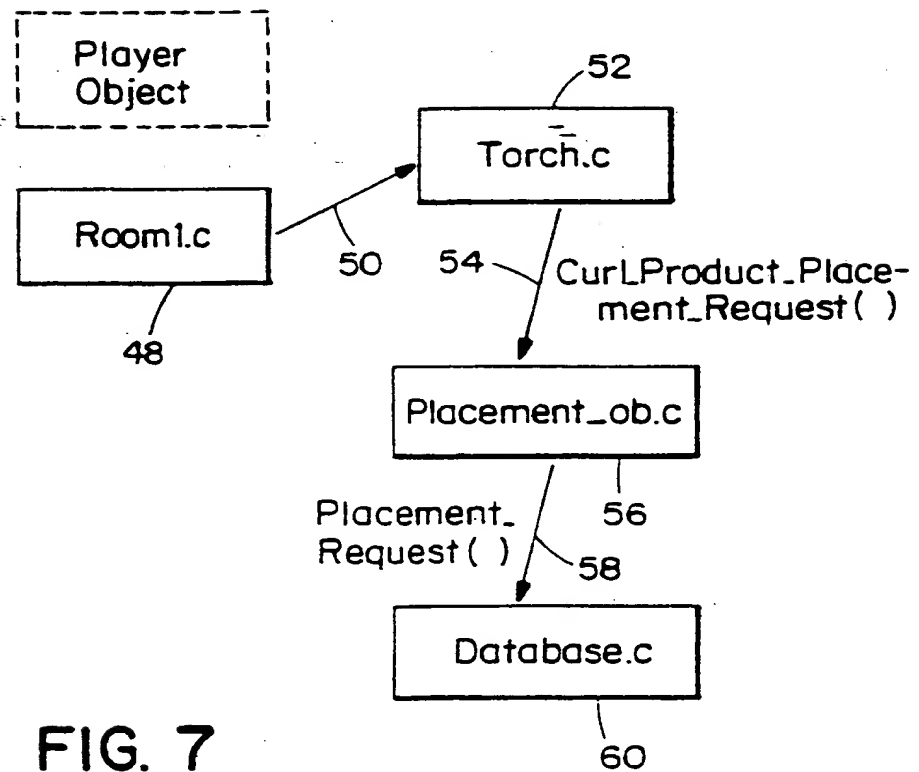
5/5
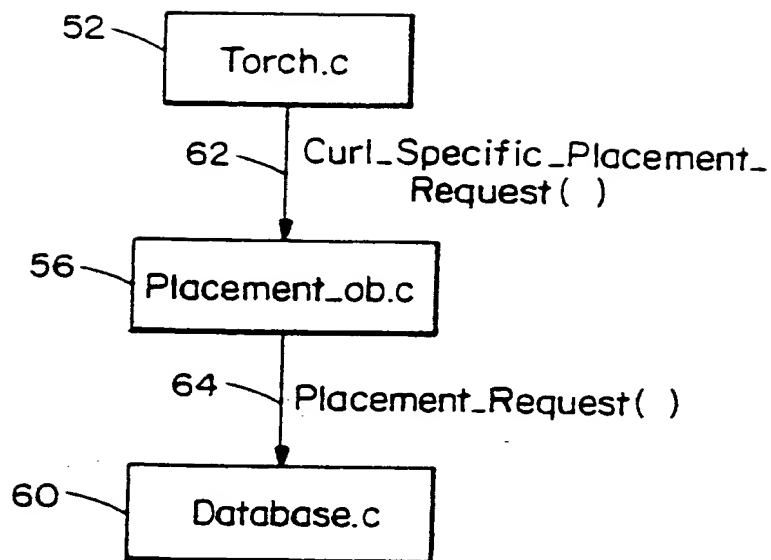
FIG. 8

FIG. 9

REVISED VERSION

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(54) Title: VIRTUAL ENVIRONMENT PRODUCT PLACEMENT

(57) Abstract:

WO 01/24083 A2

PATENT COOPERATION TREATY

PCT

DECLARATION OF NON-ESTABLISHMENT OF INTERNATIONAL SEARCH REPORT

(PCT Article 17(2)(a), Rules 13ter.1(c) and Rule 39)

Applicant's or agent's file reference 2682.1015002	IMPORTANT DECLARATION	Date of mailing *(day/month/year)* 25/06/2001
International application No. PCT/US 00/25217	International filing date *(day/month/year)* 15/09/2000	(Earliest) Priority date *(day/month/year)* 28/09/1999

International Patent Classification (IPC) or both national classification and IPC	G06F17/60

Applicant
CURL CORPORATION

This International Searching Authority hereby declares, according to Article 17(2)(a), that **no international search report will be established** on the international application for the reasons indicated below

1. [X] The subject matter of the international application relates to:

   a. [ ] scientific theories.

   b. [ ] mathematical theories

   c. [ ] plant varieties.

   d. [ ] animal varieties.

   e. [ ] essentially biological processes for the production of plants and animals, other than microbiological processes and the products of such processes.

   f. [X] schemes, rules or methods of doing business.

   g. [ ] schemes, rules or methods of performing purely mental acts.

   h. [ ] schemes, rules or methods of playing games.

   i. [ ] methods for treatment of the human body by surgery or therapy.

   j. [ ] methods for treatment of the animal body by surgery or therapy.

   k. [ ] diagnostic methods practised on the human or animal body.

   l. [ ] mere presentations of information.

   m. [ ] computer programs for which this International Searching Authority is not equipped to search prior art.

2. [ ] The failure of the following parts of the international application to comply with prescribed requirements prevents a meaningful search from being carried out:

   [ ] the description   [ ] the claims   [ ] the drawings

3. [ ] The failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions prevents a meaningful search from being carried out:

   [ ] the written form has not been furnished or does not comply with the standard.

   [ ] the computer readable form has not been furnished or does not comply with the standard.

4. Further comments:

Name and mailing address of the International Searching Authority European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040. Tx. 31 651 epo nl. Fax: (+31-70) 340-3016	Authorized officer Maria Rodriguez Novoa

Form PCT/ISA/203 (July 1998)

FURTHER INFORMATION CONTINUED FROM   PCT/ISA/ 203

The subject-matter claimed in claims 1-23,50,51 falls under the provisions of Article 17(2)(a)(i) and Rule 39.1(iii), PCT, such subject-matter relating to a method of doing business.

Claims 24-49, 52, 53 relate to a conventional system, program product, computer readable medium and electronic waveform comprising computer program code for performing the business method of claims 1-23, 50 and 51. Although these claims do not literally belong to the method category, they essentially claim protection for the same commercial effect as the method claims. The International Searching Authority considers that searching this subject-matter would serve no useful purpose. It is not at present apparent how the subject-matter of the present claims may be considered defensible in any subsequent examination phase in front of the EPO as International Preliminary Examining Authority with regard to the provisions of Article 33(1) PCT (novelty, inventive step); see also Guidelines B-VII, 1-6).

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.